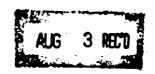




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## MELLON INSTITUTE OF INDUSTRIAL RESEARCH UNIVERSITY OF PITTSBURGH



PROCEESS REPORT for the month ended August 31, 1943

Carbide and Carbon Chemicals Corporation Industrial Fallowship No. 274-6

Subjects under )
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to be indexed )

Removal of Phenols from the Skin.

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Removal of Phenols from the Skin
To determine the effectiveness of various methods for removing phenol and substituted phenols from the intact skin the following technique was developed.
Albino and piebald rate of both sexes were used as the tast animals. The weight
range included animals between 80 and 200 grams. The bellies of the rate were
clipped and the test material applied for a one minute interval and then carefully wiped off with a standard size pledget of cotton. The survivors were
observed for a 14 day period to determine mortalities. The smallest dose killing
all of the rate dosed by this technique was determined in like manner for each
of the six test materials.

To compare the efficacy of 95% alcohol versus a solution containing 5.0% ferric chloride, 50% ethyl alcohol and 45% water, the test was performed in the manner outlined above, except that the materials were removed with a cotton pledget wet with 5 ml. of the antidote being tested. The results are tabulated below:

		Fractional Mortalities after 1 min. Contact and Removal with			
Material	Dosage gm./kg.	Dry Cotton	95% Alcohol	5% FeCl <sub>3</sub>	
100% phenol	1.58	5/5	1/10	3/10	
60% phenol and 40% p-tertbutyl phenol 60% phenol and	2.52	5/5	8/10	7/10	
40% p-tertamyl phenol 50% phenol and	2.52	5/5	7/10	9/10	
50% o-cresol 50% phenol and	1.58	4/5	6/10	4/10	
50% o-tertbutyl phenol 50% phenol and	3.16	5/5	9/10	7/10	
50% o-secbutyl phenol	3.16	5/5	7/10	8/10	

The above data indicates that the substituted phenols are no more toxic than phenol by skin absorption but they appear to penetrate the superficial layers of the skin more rapidly and hence are harder to remove. 95% alcohol is fairly affective for the removal of plain phenol and the FeCl3 mixture somewhat less affective. The results on the mixtures of phenol and substituted phenols do not indicate that either method of removal is satisfactory and furthermore the differences in mortality are not sufficiently great to rate one as better than the other.

Comparisons with soap and water wasking will be unde soon.

Henry F. Smyth, Jr.-rmg

C. Boyd Shaffer

Typed: August 28, 1943

SEMIOR INDUSTRIAL FELLOW

C. Boyd Shaffer

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